

Claims:

1. Battery, especially flat cell, comprising an electrode of lithium-metal or lithium-alloy, an
5 electrode containing an active material intercalating lithium ions, a separator between both electrodes, and a housing enclosing the electrodes and the separator with connector tabs for both electrodes, characterized by the fact that at least one of the electrodes (1; 2; 3) is a multi-layer body built by multiple folds and by an equal layer-thickness of the active material (4; 12; 13) between the folded layers.
- 10 2. Battery according to claim 1, wherein the folding is a Leporello (zig-zag)-folding. (Fig. 2)
3. Battery according to claim 1, wherein the folding is a coil folding. (Fig. 4)
4. Battery according to as in claims 1 to 3, wherein the electrode (1) comprises a carrier material (5) permeable for ions coated with active material (4) of equal layer-thickness on both sides.
- 15 5. Battery according to one of claims 1 and 2, wherein the electrode (2, Fig. 3) comprises a carrier material (5) permeable for ions coated with active material (12, 13) having a different layer-thickness on each side.
6. Battery according to claim 5, wherein the carrier material (5) is coated on one of its sides with a thin layer (13) of active material.
- 20 7. Battery according to one of claims 5 and 6, wherein the carrier material (5) is coated on its other side with a thick layer of active material (12) on every other fold.
8. Battery according to one of claims 5 to 7, wherein the thickness of the thin layer coating of active material (13) on one side of the carrier material (5) is half the thickness of the thick layer coating of active material (12) on the other side of the carrier material (5).
- 25 9. Battery according to one of claims 2 to 8, wherein the multi-fold body comprises at least two folds.
10. Battery according to one of claims 5 to 8, wherein the multi-fold body comprises at least four folds.
11. Battery according to one of claims 1 to 10, wherein the layer thickness of the active
30 material (4; 12; 13) is between 25μm and 150μm.
12. Battery according to claim 11, wherein the layer thickness of the active material (4; 12; 13) is between 40μm and 110μm.

- $$\begin{array}{ccccccc} \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \\ | & | & | & | & | & | & | \\ \text{C}_1 & \text{C}_2 & \text{C}_3 & \text{C}_4 & \text{C}_5 & \text{C}_6 & \text{C}_7 \\ | & | & | & | & | & | & | \\ \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \end{array}$$